

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A method of manufacturing *n*-type semiconductor diamond, ~~characterized in having~~ comprising:

a step of producing diamond incorporating *Li* and *N* by implanting *Li* ions into, so that 10 ppm thereof will be contained in, single-crystal diamond incorporating 10 ppm or more *N*[[,]]; and

a step of annealing said diamond incorporating *Li* and *N* at a temperature in range of from 800°C to less than 1800°C.

Claim 2 (currently amended): A method of manufacturing *n*-type semiconductor diamond, ~~characterized in having~~ comprising:

a step of producing diamond incorporating *Li* and *N* by implanting into single-crystal diamond essentially not containing impurities *Li* and *N* ions, and so that ion-implantation depths at which the post-implantation *Li* and *N* concentrations each are 10 ppm or more will overlap[[,]]; and

a step of annealing said diamond incorporating *Li* and *N* at a temperature in range of from 800°C to less than 1800°C.

Claim 3 (currently amended): A method of manufacturing *n*-type semiconductor diamond in which *Li* and *N* ions are implanted into single-crystal diamond, the *n*-type semiconductor-diamond manufacturing method ~~characterized in that~~ comprising a step of implanting the ions are implanted so that ion-implantation depths at which the post-implantation *Li* and *N*

concentrations each are 10 ppm or more will overlap, and so that the *Li* and *N* sum-total dose is $5.0 \times 10^{15} \text{ cm}^{-2}$ or less.

Claim 4 (currently amended): An *n*-type semiconductor-diamond manufacturing method as set forth in claim 3, ~~characterized in that~~ wherein an ion-implantation apparatus having an electron-beam line and two ion-beam lines is utilized to implant the *Li* and *N* ions simultaneously while radiating with the electron beam the single-crystal diamond that is ion-implanted.

Claim 5 (currently amended): A method of manufacturing *n*-type semiconductor diamond, ~~characterized in~~ comprising a step of annealing post-implantation diamond at a temperature in range of from 800°C to less than 1800°C, under high-pressure conditions of 3 GPa or more.

Claim 6 (currently amended): Semiconductor diamond being *n*-type, ~~characterized in~~ incorporating, from a crystal face thereof to the same depth, 10 ppm or more of each of *Li* and *N*, and ~~in that its~~ having a sheet resistance is of $10^7 \Omega/\square$ or less.